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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,413	06/15/2001	Shuo-Yen Robert Li	Li 19	8415
7590	04/12/2005		EXAMINER PHAN, MAN U	
John T. Peoples 14 Blue Jay Court Warren, NJ 07059			ART UNIT 2665	PAPER NUMBER

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,413

Applicant(s)

LI, SHUO-YEN ROBERT

Examiner

Man Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 4 and 9 is/are rejected.
- 7) ☒ Claim(s) 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/15/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The application of Li for a "Multicast concentrators" filed 06/15/2001 has been examined. This application claims Priority from Provisional Application 60212333 filed 06/16/2000. Preliminary amendment filed 09/11/2001 has been entered and made of record. Claims 1-3 have been canceled, and replaced with claims 4-11. Claims 4-11 are pending in the application.

Claim Objections

2. Claims 5,7 are objected to because of the following informalities:
The claims recite limitation "x_b"- wherein the recitations "x_b" is not defined and leave open-ended. All parameter should be defined in the claim for clearly setting forth the metes and bounds of the patent protection desired. Appropriate correction is required.

Claim Rejections - 35 USC ' 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US#6,335,930) in view of Yang et al. (US#5,940,389).

With respect to claim 4, Lee (US#6,335,930) and Yang et al. (US#5,940,389) disclose a novel system and method for a multi-stage interconnection network having several switching stages, according to the essential features of the claims. Lee discloses in Fig. 6 a block diagram illustrated a multicast switching for use in broadband network, in which a multi-stage (NXN) interconnection network which has N input ports and N output ports, for transmitting packets from the input ports to the output ports. The network comprises a multi-stage packet switching network having at least $\log_M N$ switching stages; and each of the switching stages having $N/2$ MXM switching elements, where M is the number of input or output ports of each switching element. Each switching element at each stage comprises X bypassing input ports, M-X input routing ports, X bypassing output ports and M-X output routing ports, where X is 1 or integer of more than 1. The bypassing output ports of each switching element at each stage are connected to bypassing input ports of each of switching elements which are disposed in a same position of a next stage, respectively, and the output routing ports of each switching element at each stage are connected to input routing ports of each of the switching elements at the next stage by means of perfect shuffle connection See also Figs 1-5; Col. 6, lines 61 plus).

However, Lee does not disclose expressly the *bicast* signals for routing in multistage interconnection network. In the same field of endeavor, Yang discloses a system and method for assigning routing tag for routing signals through the Benes network with input and output stages comprising 2x2 beta elements (For example see Figs. 1 1-20; col. 10, lines 32-53), wherein the control circuit generates the routing tags and the comparator generates different control sequences such as '00', '01', '10' and '11' (For example see col. 10, line 40-53, wherein '00' and '11' are '0-bound', '1-bound' values; and '01', '10' are the 'bicast' value) for each input signal (For example see col. 18, line 63 through col. 19, line 18) to support grouping channels, e.g. multicasting.

Regarding claim 9, It's a method claims corresponding to the apparatus claim 4 above. Therefore, claim 9 is analyzed and rejected as previously discussed with respect to claim 4.

One skilled in the art would have recognized the need for effectively and efficiently routing signals in a multicast switching for use in broadband network, and would have applied Yang's novel use of grouping channels utilizing routing tag generator for routing signals into Lee's method for switching packets in a multi-stage interconnection network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Yang's enhanced partially self routing algorithm for controller Benes networks into Lee's multi-stage interconnection network for high speed packet switching with the motivation being to provide a broadband switching.

Allowable Subject Matter

5. Claims 10, 11 are allowable.
6. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the total number of the input signals is m , among which the number of 0-bound signal is x_0 , the number of 1-bound signals is x_1 , the number of bicast signals is x_b , and the number of idle signals is $m - x_0 - x_1 - x_b$, the maximum possible total number of 0-bound and bicast ones of the input signals routed to the 0-output group of the concentrator is $\min\{m - n, x_0 + x_b\}$, and the maximum possible total number of 1-bound and bicast ones of the input signals routed to the 1-output group of the concentrator is $\min\{n, x_1 + x_b\}$, as specifically recited in the claims; wherein the 0-bound input signals are classified into r_0 priority classes, $r_0 > 1$, and the 1-bound input signals are classified into r_1 priority classes, $r_1 > 1$, and the means for routing includes means for routing the maximum possible total number of 0-bound and bicast ones of the input signals according to the priority classes of the 0-bound input signals to the 0-output group and the maximum possible total number of 1-bound and bicast ones of the input signals according to the priority classes of the 1-bound input signals to the 1-output group, as specifically recited in claims

7. Claims 4-11 of this application conflict with claims 1-2 of Application No. 09/882,075 and 09/882,112. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP. 822.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Li (US#6,657,998) is cited to show the conditionally nonblocking switch of the unimodal circular type.

The Park (US#6,563,819) is cited to show the augmented ring banyan network and method for controlling routing therein.

The Chen et al. (US#5,671,222) is cited to show the multicast routing in self routing multistage networks.

The Yang et al. (US#5,987,028) is cited to show multiple channel ATM switch.

The Zelig et al. (US#6,834,038) is cited to show protection against master unit failure in remote network access multiplexing.

The McMillen (US#4,623,996) is cited to show the packet switched multiple queue NxM switch node and processing method.

The Cooperman et al. (US#4,970,507) is cited to show the broadband switching matrix

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for delay equalization and elimination of inversion.

The Kobayashi et al. (US#6,219,349) is cited to show the broadband switching networks.

The Kobayashi et al. (US#5,896,371) is cited to show the broadband switching networks.

The Kobayashi et al. (US#5,566,179) is cited to show the broadband switching networks.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

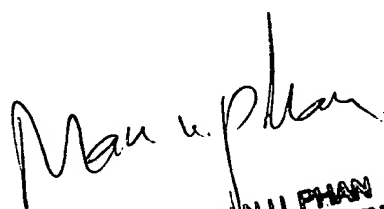
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

04/08/2005.


MAN U. PHAN
PRIMARY EXAMINER